

1  
2 CLAIMS:  
3  
4

5 1. A rapid setting, controlled low strength composition of Class C fly ash  
6 comprising hydrated lime in the amount of 0.1% to 15% by weight and an iron  
7 chelating compound in the amount of from 0.01% to 5% by weight sufficient to  
8 accelerate the hydration and set time of said fly ash.

9 2. A rapid setting, controlled low strength composition of Class C fly ash  
10 comprising hydrated lime in the amount of 0.1% to 15% by weight of fly ash and an  
11 iron chelating compound in the amount of from 0.01% to 5% by weight sufficient to  
12 accelerate the hydration and set time of said fly ash, and a filler material in the amount  
13 of 1:10 to 10:1 parts by weight.

14 3. A method by which the hydration and set time of a cementitious mixture  
15 containing Class C fly ash is accelerated comprising the step of adding hydrated lime  
16 in the amount of 0.1% to 15% by weight of and an iron chelating compound in the  
17 amount of from 0.01% to 5% by weight cementitious material to said cementitious  
18 mixture.

19 4. A rapid setting, controlled low strength composition of Class C fly ash  
20 comprising a calcium source in the amount of 0.1% to 15% by weight and an iron  
21 chelating compound in the amount of from 0.01% to 5% by weight sufficient to  
22 accelerate the hydration and set time of said fly ash.

23 5. The composition of claim 4 wherein said source is quicklime.

1     6.     The composition of claim 4 wherein said calcium source is selected from the  
2     group consisting of calcium nitrate, calcium nitrite, calcium formate, calcium acetate,  
3     calcium propionate, calcium lignosulfonate, calcium oxide, calcium hydroxide,  
4     calcium hypochlorite, anhydrous calcium sulfate, calcium sulfate dihydrate, and  
5     calcium sulfate hemihydrate.

6     7.     The composition of claim 4 wherein said calcium source is a circulating  
7     fluidized bed coal ash containing free lime in the amount of 0.25% to 70% by weight  
8     of Class C fly ash.

9     8.     The composition of claim 2 wherein said filler material is selected from the  
10    group consisting of Class F fly ash, silica sand, dolomitic calcium carbonate sand,  
11    limestone sand, expanded perlite, expanded styrofoam, bottom ash, slag, foundry sand,  
12    expanded shale, clay, ground granite sand, pumice and gravel.

13    9.     The composition of claim 4 wherein said iron chelating compound is selected  
14    from the group consisting of an alkanolamine, a polymer of ethyleneimine, a block  
15    copolymer containing polyethyleneimine segments, an amino-substituted polymer of  
16    acrylic acid, the salt of an amino-substituted polymer of acrylic acid, a carboxyated  
17    amine compound, a salt of a carboxyated amine compound, ethylenediaminetetraacetic  
18    acid and salts thereof; nitrilotriacetic acid and salts thereof, an amine substituted  
19    surfactant, an amine oxide substituted surfactant, and a guanidine salt.

20